CLAIMS

1. A method of fabricating a semiconductor device, the method comprising the steps of:

forming an under growth layer on a substrate;

forming an anti-growth film having a specific opening portion on the under growth layer;

forming a first conductive type layer by selective growth from the opening portion, the first conductive type layer having a band gap energy smaller than that of the under growth layer;

stacking an active layer and a second conductive type layer on the first conductive type layer to form a stacked structure; and

peeling the stacked structure from the substrate and the under growth layer at an interface between the under growth layer and the first conductive type layer by irradiating the stacked structure with light rays traveling through the substrate.

2. A method of fabricating a semiconductor device as claimed in claim 1, wherein each of the under growth layer, the first conductive type layer, the active layer and the second conductive type layer is a wurtzite type compound semiconductor layer.

3. A method of fabricating a semiconductor device as claimed in claim 2, wherein the wurtzite type compound semiconductor layer is a nitride based compound semiconductor layer.

4. A method of fabricating a semiconductor device as claimed in claim 1, wherein the under growth layer is made from AlGaN and the first conductive type layer is made from GaN.

5. A method of fabricating a semiconductor device as claimed in claim 1, wherein at least the active layer extends within a plane parallel to a tilt crystal plane tilted from a principal plane of the substrate.

6. A method of fabricating a semiconductor device as claimed in claim 1, wherein the substrate has light permeability.

7. A method of fabricating a semiconductor device as claimed in claim 1, wherein the stacked structure is irradiated with the light rays traveling from a back side of the substrate.

8. A method of fabricating a semiconductor device as claimed in claim 1, wherein the peeling of the stacked structure from the substrate and the under growth layer is made by abrasion caused by light irradiation.

9. A method of fabricating a semiconductor device as claimed in claim 1, wherein the light rays have an energy value between a band gap energy of the under growth layer and a band gap energy of the first conductive type layer.

10. A method of fabricating a semiconductor device as claimed in claim 1, wherein the light rays are laser beams.

11. A method of fabricating a semiconductor device as claimed in claim 10, wherein the laser beams have a wavelength ranging from 340 nm to 360 nm.

12. A method of fabricating a semiconductor device as claimed in claim 1, wherein one electrode is formed on a peeled back surface of the first conductive layer of the stacked structure to form a semiconductor device.

13. A method of fabricating a semiconductor device as claimed in claim 1, wherein a cleavage plane of the stacked structure for forming a semiconductor device is formed by peeling the stacked structure from the substrate and the under growth layer.

14. A method of fabricating a semiconductor device as claimed in claim 1, wherein the cleavage plane becomes a resonance end plane of the semiconductor device.

15. A semiconductor device, comprising:

an under growth layer formed on a substrate;

an anti-growth film, having a specific opening portion, formed on the under growth layer;

a first conductive type layer formed by selective growth from the opening portion, the first conductive type layer having a band gap energy smaller than that of the under growth layer; and

an active layer and a second conductive type layer stacked on the first conductive type layer to form a stacked structure;

wherein the stacked structure is peeled from the substrate and the under growth layer at an interface between the under growth layer and the first conductive type layer by irradiating the stacked structure with light rays traveling through the substrate.

16. A semiconductor device as claimed in claim 15, wherein each of the under growth layer, the first conductive type layer, the active layer and the second conductive type layer is a wurtzite type compound semiconductor layer.

17. A semiconductor device as claimed in claim 16, wherein the wurtzite type compound semiconductor layer is a nitride based compound semiconductor layer.

18. A semiconductor device as claimed in claim 15, wherein the under growth layer is made from AlGaN and the first conductive type layer is made from GaN.

19. A semiconductor device as claimed in claim 15, wherein at least the active layer extends within a plane parallel to a tilt crystal plane tilted from a principal plane of the substrate.

20. A semiconductor device as claimed in claim 15, wherein the substrate has light permeability.

21. A semiconductor device as claimed in claim 15, wherein the stacked structure is irradiated with the light rays traveling from a back side of the substrate.

22. A semiconductor device as claimed in claim 15, wherein the peeling of the stacked structure from the substrate and the under growth layer is made by abrasion caused by light irradiation.

23. A semiconductor device as claimed in claim 15, wherein the light rays have an energy value between a band gap energy of the under growth layer and a band gap energy of the first conductive type layer.

24. A semiconductor device as claimed in claim 15, wherein the light rays are laser beams.

25. A semiconductor device as claimed in claim 24, wherein the laser beams have a wavelength ranging from 340 nm to 360 nm.

26. A semiconductor device as claimed in claim 15, wherein one electrode is formed on a peeled back surface of the first conductive layer of the stacked structure to form a semiconductor device.

27. A semiconductor device as claimed in claim 15, wherein a cleavage plane of the stacked structure for forming a semiconductor device is formed by peeling the stacked structure from the substrate and the under growth layer.

28. A semiconductor device as claimed in claim 15, wherein the cleavage plane becomes a resonance end plane of the semiconductor device.